March 28, 1944. E. H. SARGENT ET AL 2,345,074

DISPENSING MACHINE

Filed April 23, 1941 3 Sheets-Sheet 1

Fig. 2

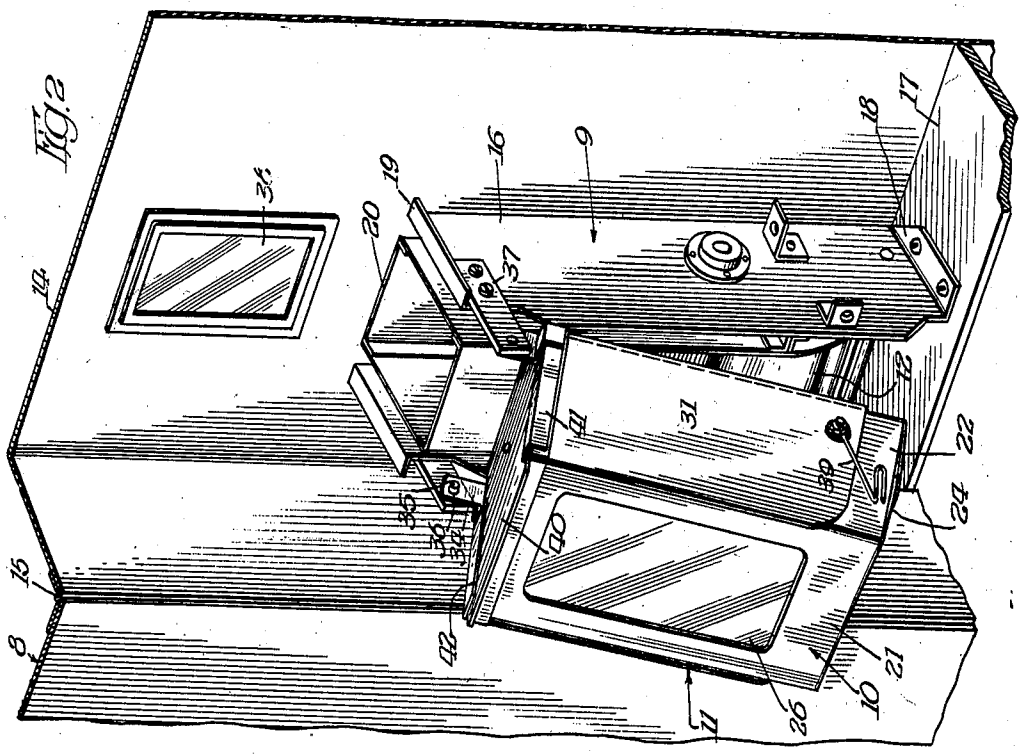
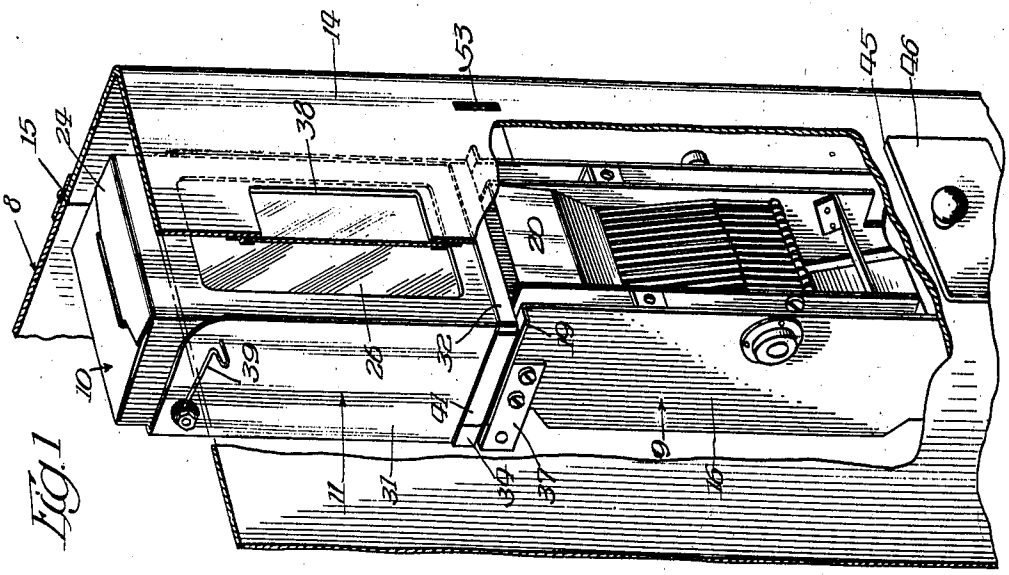


Fig. 1



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Fig. 3

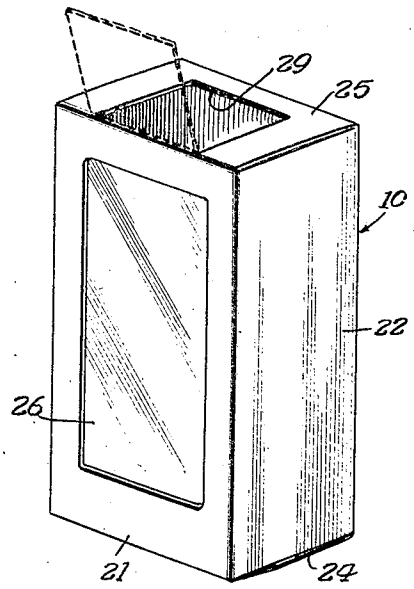


Fig. 4

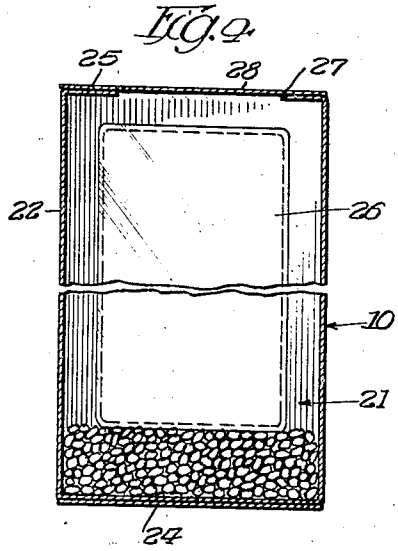
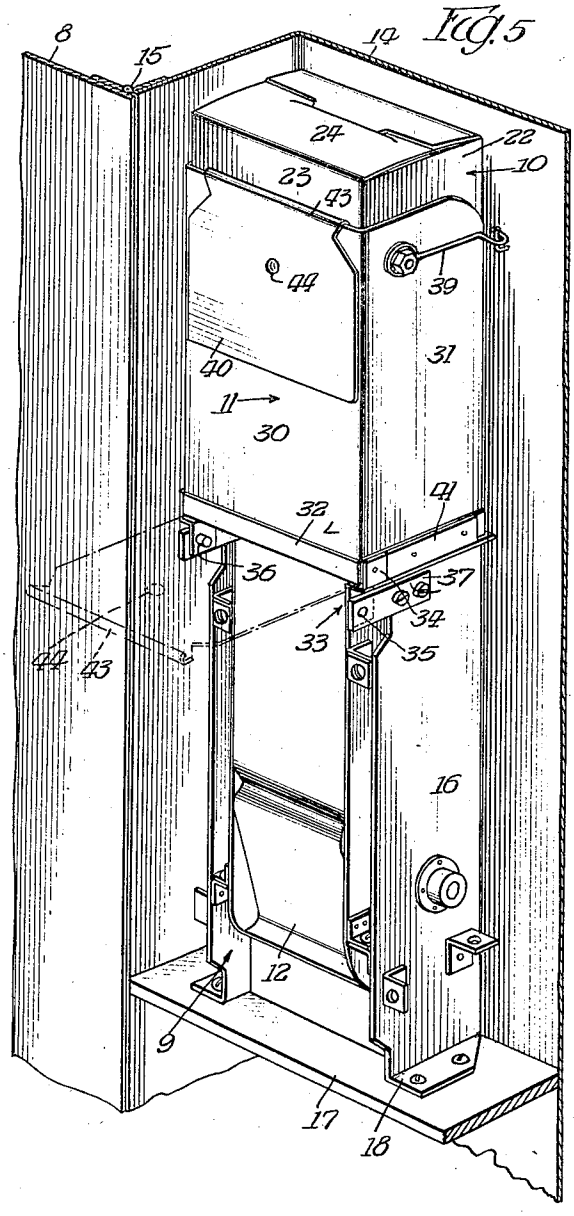


Fig. 5



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DISPENSING MACHINE

Filed April 23, 1941 3 Sheets-Sheet 3

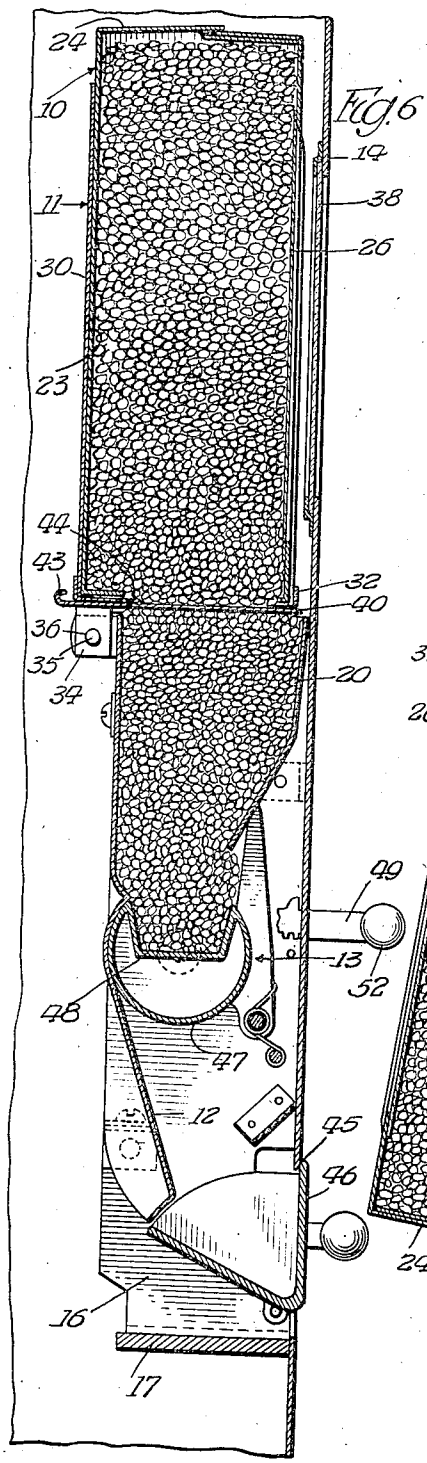


Fig. 6

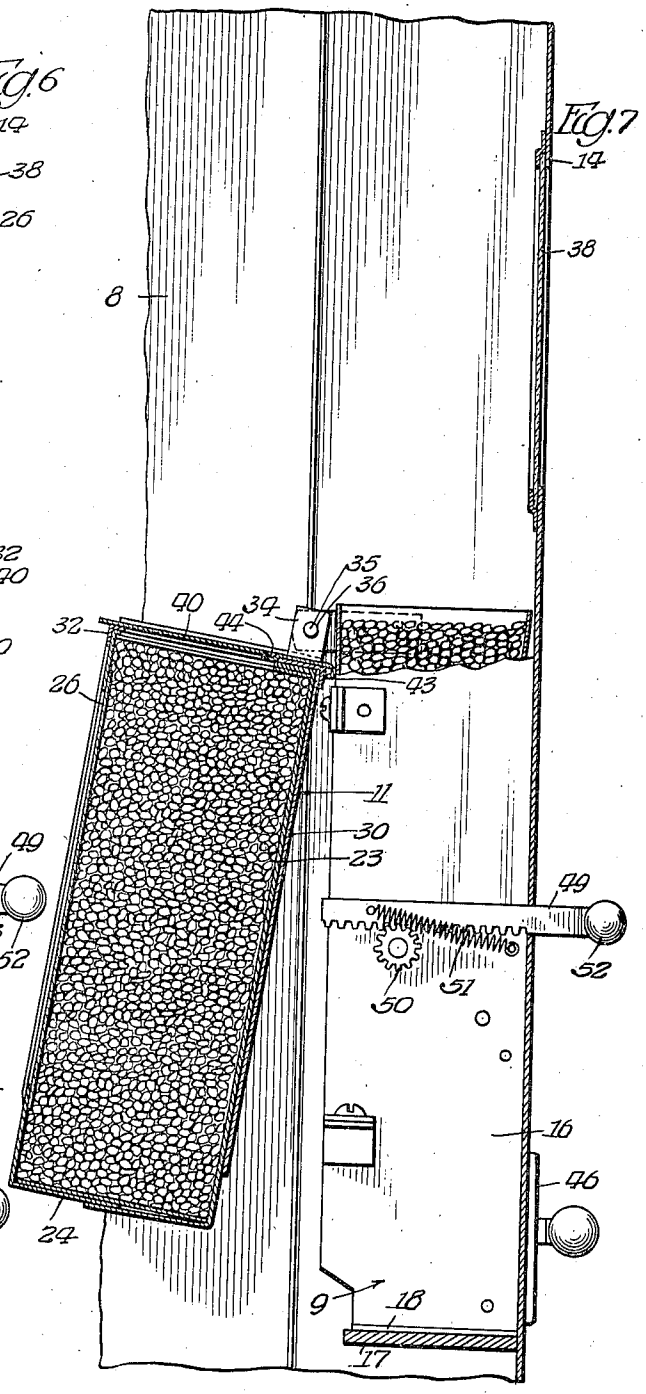


Fig. 7

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UNITED STATES PATENT OFFICE

2,345,074

DISPENSING MACHINE

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Application April 23, 1941, Serial No. 389,852

3 Claims. (Cl. 312—152)

The present invention relates generally to dispensing machines. More particularly the invention relates to that type of machine which is primarily designed for use in dispensing batches of nuts, small candies or other comestibles and as its main parts comprises a door equipped housing, means in the housing for storing a comparatively large quantity of the comestibles to be dispensed, and a chute beneath the storing means with the lower discharge end thereof leading to the housing exterior.

One object of the invention is to provide a dispensing machine of this type which is generally of new and improved construction and is characterized by the fact that the means for storing the comestibles is of simple design and not only may be charged expeditiously but also is extremely sanitary.

Another object of the invention is to provide a dispensing machine of the type under consideration in which the storing means for the comestibles comprises a box which is adapted to be filled with the comestibles to be dispensed and has a readily removable top closure member, and in addition comprises an open bottom box holder which is pivotally mounted above the chute so that it is free when the door of the housing is open to swing back and forth between a normal operative position wherein it is above and vertically aligned with the upper end of the chute and a charging or box receiving position wherein it hangs downwards and is disposed in an inverted position alongside of the chute, and is adapted when in its charging position to have the comestible filled box placed therein in such manner that the top faces upwards, and is further adapted after placement of the box therein and removal of the top closure member to be swung upwards into its normal operative position wherein it serves to hold the box in an inverted position, that is, a position wherein the comestibles are free to pass downwards through the open bottom of the holder into the discharge chute.

Another object of the invention is to provide a dispensing machine of the last mentioned character in which the open bottom of the holder has slideways along the sides thereof and the storing means has associated therewith a plate which is adapted, in connection with charging of the holder with the box, to be slid into the slideways into a position wherein it serves to close the open bottom of the holder and thus prevent spilling of the comestibles from the box in connection with swinging of the holder into its normal operative position, and is further adapted after swinging of the holder into its operative position, to be withdrawn from the slideways and thus permit of a free flow of the comestibles from the box through the open bottom of the holder.

A further object of the invention is to provide a dispensing machine of the type and character under consideration in which the housing and comestible box have windows which, when the box is in the holder and the latter is in its normal operative position, are in registry with one another and permit the contents of the box to be viewed from the housing exterior.

A still further object of the invention is to provide a dispensing machine which is an improvement upon, and has certain advantages over, previously designed machines of the same general type.

Other objects of the invention and the various advantages and characteristics of the present dispensing machine will be apparent from a consideration of the following detailed description.

The invention consists in the several novel features which are hereinafter set forth and are more particularly defined by claims at the conclusion hereof.

In the drawings which accompany and form a part of this specification or disclosure and in which like numerals of reference denote corresponding parts throughout the several views:

Figure 1 is a fragmentary front perspective view of a dispensing machine embodying the invention;

Figure 2 is a fragmentary perspective view showing the door of the dispensing machine housing in its open position and also showing the pivoted box holder in its charging or box receiving position;

Figure 3 is a perspective view of the box constituting a part of the comestible storing means;

Figure 4 is a vertical section of the box;

Figure 5 is a fragmentary perspective view showing the door of the dispensing machine housing in its open position and illustrating the box holder in its normal operative position wherein it is disposed above and in vertical alignment with the upper end of the chute;

Figure 6 is a vertical section showing the box holder in its normal operative position and illustrating the manner in which the slide type plate serves to retain the comestibles in the box prior to withdrawal of the plate from the slideways at the sides of the open bottom of the holder; and

Figure 7 is a vertical section showing the box holder after it has been swung into its charging position and the box has been inserted therein preparatory to swinging the holder into its normal operative position over the chute.

The dispensing machine which is shown in the drawings constitutes the preferred embodiment of the invention. It is essentially designed as a dispensing medium for comestibles, such as, peanuts and candy and as its main parts comprises a housing 8, a frame 9 in the housing, comestible storing means in the form of a box 10 and a box holder 11, a discharge chute 12 and coin con-

trolled mechanism 13 for delivering measured batches of the comestibles from the storing means to the discharge chute.

The housing 8 is of box-like design. It comprises a bottom wall, a top wall, a pair of side walls, and a back wall and has at the front thereof a door 14. Such door, as shown in Figures 1 and 2, embodies a marginal flange and has a hinge connection 15 between one of the side portions of its flange and the adjacent side wall of the housing in order that it may be swung back and forth between open and closed positions. Suitable locking mechanism (not shown) is mounted on the door for the purpose of locking the door in its closed position. When the door is in such position access to the interior of the housing is prevented. Upon release of the locking mechanism and swinging of the door into its open position access may be had to the housing interior.

The frame 9 is mounted on the inside of the door 14 and serves as a supporting medium for the box holder 11 and the chute 12. It consists of a pair of vertically extending laterally spaced plates 16 and rests upon, and is supported by, an inwardly extending rigid shelf 17 on the lower portion of the door 14. The plates 16 extend at right angles to the door and embody along the bottom margins thereof out-turned flanges 18 which rest on the shelf 17. Bolts or other attaching devices extend through aligned holes in the flanges 18 and the shelf 17 and serve to hold the frame 9 in fixed relation with the shelf of the door. The upper margins of the plates 16 are bent outwards in order to form horizontally extending flanges 19 at the top of the frame 9. A hopper 20 is fixedly mounted between the upper ends of the plates 16 constituting the frame 9 and this hopper, as best shown in Figure 3, overlies the discharge chute 12. The upper end of the hopper is open, as shown in Figure 2. In addition it is horizontally aligned with the out-turned flanges 19 on the upper ends of the plates 16.

The box 10 comprising a part of the storing means serves as a container for the comestibles to be vended and is adapted to be filled at the place where such comestibles are prepared. It is essentially a temporary or one-use container and comprises a front 21, a pair of sides 22, a back 23, a bottom 24 and a top 25. The front 21, as shown in Figure 3, is provided with a window 26 in the form of a rectangular opening and a sheet of transparent material behind the opening. The bottom 24 is in the form of a plurality of interlocking flaps and these are adapted to be disengaged and opened in connection with filling of the box 10. The top 25 of the box is suitably secured in place and has its central portion weakened by way of lines 27 of slits. The lines are four in number, as shown in Figure 3 and define between them a readily removable top closure member 28. This member is temporarily secured in place by way of the parts between the slits and is adapted to be removed by rupture of such parts. When the member 28 is removed from the central portion of the box top 25 an opening 29 is formed in the box top for the discharge of the comestibles in the box.

The holder 11 is of box-like design and serves, as hereinafter described, to hold the box 10 in an inverted or comestible discharging position over the chute 12. It is formed of sheet metal and comprises a back 30 and a pair of sides 31. The sides extend forwardly from the side margins of the back and are spaced apart a sufficient distance so as slidably and snugly to receive the sides 22 of the box between them when the box is inserted into place in the holder 11. A rectangular marginally flanged frame 32 is secured to the bottom portion of the holder and serves to hold the back 30 and the sides 31 in rigid relation. The flange of the frame extends upwards when the holder is in its normal operative position and has the back and side portions thereof welded or otherwise fixedly secured to the adjacent portions of the back and sides of the holder. The frame is adapted to have the top 25 of the box 10 rest on it when the box is in place in the holder. The opening in the frame corresponds in shape to the opening 29 in the top 25 of the box and registers with such opening when the box is held by the holder in its operative position over the chute 12. Two pivotal connections 33 in the form of a pair of brackets 34 and a pair of pintles 35 serve pivotally to connect the holder to the frame 9 in such manner that when the door 14 of the housing 8 is in its open position the holder if free to be swung back and forth between a normal operative position wherein it is above and vertically aligned with the upper end of the chute 12 and a charging or box receiving position wherein it hangs downwards and is disposed in an inverted position alongside and rearwards of said chute 12. The brackets 34 of the connections 33 are secured to, and project downwardly from, the rear lower corners of the holder 11. They are positioned in horizontal alignment and have opposed or coaxial holes 36 in the lower portions thereof. The pintles 35 fit within the holes 36 and are secured to, and project inwards from, the rear ends of a pair of elongated horizontally extending plate type brackets 37. The front ends of the latter lap and are fixedly secured to the upper ends of the plates 16 constituting the frame 9. When the door 14 of the housing is in its open position the holder 11 for the box 10 is capable of being swung downwards into its aforementioned charging position (see Figure 2). When the holder is in such position and it is desired to insert the box into the holder the box is inserted into the space between the sides and back of the holder and is shifted upwards in order to bring the top 25 thereof into abutment with the frame 32 at the bottom of the holder. Before inserting the box into the holder the top closure member 28 is removed so as to form the opening 29 in the top 25 of the box. After insertion of the box into the holder the holder is swung upwards into its normal operative position (see Figures 1, 5 and 6). When the holder is in such position the box 10 is in an inverted position and the comestibles therein are free to flow through the opening 29 and the opening in the frame 32 into the hopper 20. The out-turned flanges 19 at the upper ends of the plates 16 serve to support the box holder 11 when the latter is in its normal operative position. When the box is in place in the holder the front portion of the marginal flange of the frame 32 extends across the lower margin of the box front 21 and prevents the box from moving forwards from the holder. The holder 11, when in its operative position, serves to hold the box so that the window equipped front 21 thereof is in abutment or contact with the inner face of the door 14. In order to permit the comestibles in the box 10 to be viewed from the housing exterior through the window 26 the door 14 of the hous-

ing is provided with a window 38. The latter is in the form of a rectangular opening in the housing door and a glass plate or like transparent material extends across the opening. As shown in Figure 1, the window 38 is so positioned that is registers with the window 26 in the front 21 of the box 10 when the box is in its comestible discharging position. The transparent panel or plate of the window 38 is suitably locked in place so as to prevent any access to the comestibles in the box from the housing exterior. The holder 11 is releasably secured in its normal operative position by means of a spring latch 39. The latter is secured by way of a bolt to the upper end of one of the holder sides 31 and is adapted to engage or coact with a complemental latch part or eye (not shown).

In order to prevent spilling of the comestibles through the opening 29 in the box top 25 during inversion of the box into its operative or discharging position a plate 40 is provided. This plate is preferably in the nature of a sheet metal stamping and serves as a temporary closure member for the bottom of the box holder during swinging of the box holder from its charging position into its normal operative position. In order releasably to secure the plate 40 in place across the bottom of the box holder two angle brackets 41 are provided. These brackets are secured to the side portions of the rectangular flange equipped frame at the bottom of the holder and are arranged so that they form a pair of opposed open ended slideways 42 along the lower ends of the sides 31 of the holder. In connection with charging of the holder the plate 40 is slid into interlocked relation with the slideways 42 directly before the holder is swung downwards into its charging position. In sliding the plate into place the front corners are inserted into the rear ends of the slideways and the plate is then shifted forwards so that it completely overlies and closes the central opening in the flanged frame 32 at the bottom of the holder. After sliding of the plate into place the holder is swung downwards into its charging position, as heretofore pointed out. After charging of the holder with the comestible filled box the holder is swung up into its normal operative position. During upward swing of the holder the plate, due to the fact that it forms a closure for the central opening in the frame 32, prevents spilling of the comestibles from the box 10. After shift of the holder into its operative position the plate is slid rearwards out of engagement with the slideways 42. After sliding of the plate out of its operative position the comestibles in the box are free to flow downwards through the box top opening 29 and the frame opening into the hopper 20. The rear margin of the plate is bent upwards and then back to form a hook-like flange 43. This flange has a three-fold purpose. In the first place it serves as a handle for sliding the plate into and out of its operative position. Secondly, it acts as a stop for preventing the plate from being slid too far forwards when it is slid into its operative position. Thirdly, it may be employed as a hook whereby the plate, when not in use, may be hung from the upper margin or edge of the back 30 of the box holder 11 (see Figure 5). The rear central portion of the plate 40 is struck upwards to form a head-like protuberance 44. This protuberance is adapted when the plate is slid into its operative position across the opening in the bottom of the holder to snap into the opening in the frame 32 and serves, when in such position, to retain the plate in place.

The discharge chute 12 is located directly beneath the hopper 20. It is suitably secured between the lower ends of the plates 16 constituting the frame 9 and communicates with the exterior of the housing by way of an opening 45 in the lower portion of the door 14. A forwardly and rearwardly tiltable trough 46 is located at the lower or discharge end of the chute 12 and fits within the opening 45, as shown in Figure 6. This trough is adapted, after discharge of a batch of the comestibles, to receive such batch, and is further adapted to be tilted forwards into an open position in order that the person operating the machine may receive the batch.

The coin controlled mechanism for delivering measured batches of the comestibles from the box and holder type storing means to the discharge chute comprises a drum 47. This drum is positioned between the lower end of the hopper 20 and the upper end of the chute 12 and has a pocket 48 in one side thereof. It is suitably supported to rotate about a horizontal axis and is controlled by way of a rack 49 and a pinion 50. The rack extends horizontally and is positioned between one end of the drum and the adjacent plate 16. It is mounted or arranged to slide horizontally and is urged outwards by way of a tension spring 51. The front end of the rack extends through a slit in the door 14 and is provided with a knob or handle 52. The pinion 50 is in mesh with the rack and is connected to the drum. When the rack is shifted inwards it operates through the medium of the pinion to rotate the drum 47 from a position wherein the pocket 48 faces upwards to a position wherein such pocket faces downwards and operates to discharge the comestibles therein into the chute 12. On the out-stroke of the rack the drum is reversely rotated back to its original supporting position wherein the pocket 48 faces upwards and receives a batch of comestibles from the hopper 20. A conventional or standard coin device, including a coin slot 53 is associated with the rack and operates in response to insertion of a proper coin into the slot to release the rack so that it may be shifted inwards in connection with a vending operation. Such device, as well understood in the art, permits but a single inward shift of the rack in connection with insertion of a coin into the slot and operates at the end of the retractile stroke of the rack to lock the rack against further inward shift except in connection with insertion of another coin in the slot.

When it is desired to charge the machine so that it is in readiness for comestible vending or dispensing purposes the door 14 is first unlocked and then is swung into its open position so as to expose the box holder 11. After this operation the plate 40 is inserted into the slideways 42 and is shifted forwards in order to bridge or completely traverse and close the central opening in the marginally flanged frame 32 at the bottom of the holder. After proper positioning of the plate 40 the holder 11 is swung downwards and rearwards into its charging position wherein it hangs downwards and is disposed in inverted position alongside and rearwards of the discharge chute 12. As soon as the holder is in its charging position the closure member 28 is removed from the top 25 of the box 10. This operation results in the formation of the hole 29 in the box top 25. After removal of the closure

member 28 the box is inserted into the holder 11 and is then slid upwards in order to bring the top 25 into abutment with the marginally flanged frame 32. The box when inserted into the holder is arranged so that the window equipped front 21 faces rearwards, as shown in Figure 2. After insertion of the box into the holder the latter is swung upwards into its normal operative position wherein it is supported by the out-turned flanges 19 at the upper ends of the frame forming plates 16 and overlies the hopper 20. At the conclusion of this operation the holder is secured in place by way of the latch 39 and the plate 40 is disconnected from the holder by sliding it rearwards out of the slideways 42. At the conclusion of the last two operations the door is swung into its closed position and is then locked in place. To obtain a batch of the comestibles a coin of proper denomination is inserted into the slot 53 in the door 14 of the housing. Thereafter the rack 49 is shifted rearwards to its fullest extent and then retracted. In connection with rearward shift of the rack the drum 47 with the pocket therein filled with comestibles is rotated throughout an arc of substantially 180 degrees. During such rotation of the drum the pocket is brought into an inverted position and operates to discharge the comestibles into the trough 46 via the discharge chute 12. After retraction of the rack the trough is swung forwards.

The herein described dispensing machine is essentially simple in design and construction and hence may be manufactured at a low and reasonable cost. It may be charged expeditiously due to the arrangement and construction of the box and box holder constituting the comestible storing means. An inherent advantage of the improved dispensing machine resides in the fact that no human hands are brought in contact with the comestibles in connection with a charging operation and hence the machine as a whole is sanitary.

The invention is not to be understood as restricted to the details set forth since these may be modified within the scope of the appended claims without departing from the spirit and scope of the invention.

Having thus described the invention what we claim as new and desire to secure by Letters Patent is:

1. In a dispensing machine comprising a door-equipped housing and a discharge chute disposed in the housing and communicating with the housing interior, the combination of a vertically elongated box-like holder disposed in the housing and consisting of a back, a pair of sides connected to, and extending forwards from, the side margins of the back, and a flat rectangular bottom frame extending inwards from the lower edges of the back and sides and having an upstanding marginal flange with the back and side portions thereof fitting against, and fixedly secured to, the lower margins of the back and sides, the front of the holder being open and the lower portion of the holder being pivotally mounted so that upon opening of the door the holder is adapted to swing back and forth between a normal operative position wherein it is above, and vertically aligned with, the chute and a charging position wherein it hangs downwards in an inverted position, and a box for the articles to be dispensed provided with an opening in the top thereof and adapted when the holder is in its charging position to be inserted into the holder via the open front in such manner that the top thereof abuts against the frame of the holder and further adapted upon swinging of the holder into its normal operative position to assume an inverted position over the chute.

2. In a dispensing machine comprising a door-equipped housing, a pair of vertically extending laterally spaced plates in the housing, and a discharge chute mounted between the plates and communicating with the housing exterior, the combination of a vertically elongated box-like holder disposed in the housing and consisting of a back, a pair of sides connected to, and extending forwards from, the side margins of the back, and a flat rectangular frame connected fixedly to, and extending inwards from, the bottom portions of the back and sides, the front of the holder being open and the lower end of the holder being pivotally connected to the upper ends of the plates so that upon opening of the door the holder is adapted to swing back and forth between a normal operative position wherein it is supported by the upper ends of the plates in vertical alignment with the upper end of the chute and a charging position wherein it hangs downwards in an inverted position, and a box for the articles to be dispensed provided with an opening in the top thereof and adapted when the holder is in its charging position to be inserted in an upright manner within the holder via the open front and further adapted upon swinging of the holder into its normal operative position to assume an inverted position over the chute.

3. In a dispensing machine comprising a door-equipped housing, a pair of vertically extending laterally spaced plates in the housing, and a discharge chute mounted between the lower ends of the plates and communicating with the housing exterior, the combination of a vertically elongated box-like holder comprising a back, a pair of sides connected to, and extending forwards from the side margins of the back, and a flat rectangular bottom frame connected to, and extending inwards from, the lower portions of the back and sides, a pair of angle brackets connected to the bottom portions of the holder sides and arranged so that they form a pair of opposed open ended slideways beneath the frame, the bottom portion of the holder being pivotally connected to the upper ends of the plates so that upon opening of the door the holder is adapted to swing back and forth between an upstanding normal operative position wherein it is in vertical alignment with the upper end of the chute and the angle brackets rest upon the upper ends of the plates, and a charging position wherein it hangs downwards in an inverted position, a box for the articles to be dispensed provided with an opening in the top thereof and adapted when the holder is in its charging position to be inserted in an upright manner within the holder, and further adapted upon swinging of the holder into its normal operative position to assume an inverted position, and a plate adapted prior to shift of the holder from its charging position to its normal operative position to be slid into the slideways into a position wherein it closes the central opening in the frame, and further adapted after swinging of the holder into its said normal operative position to be removed from the slideways so as to permit downward flow of the material from the box into the discharge chute.

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